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**INDICATIVE COST OF EDUCATIONAL SERVICES AS A WAY TO OPTIMIZE  
UKRAINIAN HIGHER EDUCATION**

**Abstract.** The paper considers the impact of the indicative cost of education (the minimum amount of tuition fees on the contractual basis (contract) at the expense of individuals/legal entities) in state higher education institutions on the Ukrainian market of educational services. It demonstrates that the introduction of the indicative cost of higher education by the state institutions of higher education was accessible through the application of the dumping strategy - by using the budget funds to educate fee-paying students. Under such conditions, the share of private higher education was not more than 10 percent of the total number of fee-paying students. The present paper aims to assess the impact of the introduction of the indicative cost of education on the relationship between private and public higher education, and the shift of the equilibrium cost of education. It is determined that this indicator is calculated according to a simplified algorithm individually for each state higher education institution and does not fully consider all the actual costs of the educational process. At the same time, such an implementation does not allow public institutions to use the dumping strategy and over time will change the ratio of quantitative indicators of private and public higher education in Ukraine. The sample flowchart displaying the supply and demand for the speciality "Economics" illustrates how the ratio of students studying on a contractual basis in private and state higher education institutions will change at different ratios of the indicative cost and the equilibrium cost of education in the

speciality "Economics" according to the 2019 data. It was concluded that, in general, the introduction of the indicative cost of education would subsequently lead to significant changes in the ratio of private and public higher education institutions, their student population under contract (fee-paying students) where the main factors will be the customer's fiscal capacity and the income, they provide. As a result, there will be a shift of the equilibrium point for most in-demand specialities in the direction of increasing the cost of training and reducing the volume of final contracts between the applicants and higher educational institutions.

**Keywords:** indicative cost (minimum tuition fee), educational services, educational services market, demand, supply, higher education

Formulas: 0, fig.: 5, tabl.: 2, bibl.: 35

**JEL Classification:** C01, C15, E03, E02

**Introduction.** The precedent of the transformation of Ukrainian higher education is very unique, first of all, in its duration and, second of all, in the fact that it was carried out largely by representatives of the former ideological system, unlike the countries of Eastern Europe [Halasz, 2015; Finikov, 2012; Sabloff, 1999]. This can be considered as one of the reasons for the long and incomplete stage of educational transformation in the country. As a result, outdated stereotypes continued to dominate the mind of university management for a long time, which in many cases led to a purely formal approach to European educational innovations [Finikov, 2012; Gapinski, 2010; Szelenyi, 2010, Sting, 1994].

Among the dominant trends in the transformation of higher education in Ukraine we single out deideologization in terms of partial deindustrialization of the country, the transition to mass higher education, the introduction of a multilevel higher education system, the formation of educational standards and regulations in accordance with European space and the emergence of private education. The private sector of higher education has become low compared to the public sector of development and has remained secondary both in terms of human resources (teaching) potential and attractiveness for applicants [Finikov, 2012]. According to the register of the educational activity participants as of 01.01.2020, there are 151 private institutions of higher education (hereinafter HEIs) in Ukraine, more than half of these (86) have fewer than 200 applicants, only 18 of HEIs have pool of applicants over 1000 people [Open data of the Unified State Electronic Database on Education, State Statistics Service of Ukraine, 2020]. It can be assumed that the lack of real competition from private education slowed down the processes of adaptation of the Ukrainian education to the European standards.

At present, higher education remains excessively massive. According to the results of the study in 2018, the average number of graduates with full general secondary education (hereinafter referred to as FGSE) entering higher education institutions in Ukraine is approximately 80%, while in the European Union it constitutes only 30%. Thus, the concept of higher education as a social project in Ukraine dominates the concept of quality [Kvit, 2019]. During the period of Ukraine's independence, a number of truly important institutional changes were made, including the accession to the Bologna Process in 2005, introduction of External Independent Evaluation (hereinafter ZNO) since 2007 [Finikov, 2012; Finikov & Sharov, 2014], adaptation of the

legal framework to international standards [Kvit, 2019] from 2014 until now, etc. The transition to a student-centered system of admission to higher education institutions of Ukraine became an important step in 2015 (the principle of “chance to study for every applicant”) [Kvit, 2019]. Enrollment for places under the state order for the Bachelor’s educational level (hereinafter EL) on the completion of general secondary education began to be carried out on the basis of an open ranking list for certain specialities at the state level in accordance with the number of budget places set by the Cabinet of Ministers for each speciality, for each level of higher education and admission base. The system fundamentally changed the approach to the allocation of budget places: for a large part of the HEIs it was virtually impossible to set a fixed number of applicants within certain specialities (admission option, when the number of budget places in certain HEIs was known in advance before the university admissions process), which, in its turn, eliminated corruption during the admission to the HEI; for the first time, the system admission to the HEIs took into account the country’s sectoral priorities, regional attractiveness and training conditions for rural youth, which are not always at a satisfactory level [Ministry of Education and Science of Ukraine, 2014]. The equilibrium is based on the respective coefficients, which influence the formation of the ranking point of the applicants. In addition, the system also considers the priority of the specialities defined by the applicant and the HEI, which they wish to enter. Despite the criticism of the current admission system (for example, a significant reduction in the independence of universities in matters of admission, the complexity of the application procedure), the main result – an increase in the share of residents from rural areas and small towns among students – is worth mentioning. This means that the percentage of the population with access to social elevators has increased and corresponds to the basic principles of a democratic society [World Bank, 2017; Becker, Burdelova & Yudanov, 2012; Lawrence, 2001; Stiglitz, 1997]. In this way, the existing system of income-generating activities facilitates the access to professions promising for applicants and beneficial for the economy of the country out of public funds.

However, the current state of education in Ukraine is not conducive to economic growth [Svirko & Trosteniuk 2020]. According to world statistics, calculations confirm that a high level of education should correspond to a high level of economic development (GDP per capita in US dollars). Ukraine, along with the Russian Federation and Kazakhstan, goes beyond 95% of the confidence intervals due to the level of economic development (GDP per capita is 3,000 US dollars), which in a sample of 180 countries corresponds to the educational level of 10-15% (percentage of the population with a degree), with 50-60% available in Ukraine [Skrypnyk, Klymenko & Kostenko, 2020; Skrypnyk & Oborska, 2016, Skrypnyk, 2010].

During all the years of independence, the Government of Ukraine allocated a significant share of the State budget to education and was among world leaders in terms of the amount of such expenditure [Skrypnyk & Oborska, 2015]. However, the public efficiency of the expenditure proved to be extremely low, and a large proportion of the expenditure was allocated specifically to current needs rather than to the development of this sphere. At present, with the growing financial and political decentralization of the country, the share of expenditure is shifted to local budgets, but the educational share of the burden on the state budget remains significant [Kvit, 2019]. In our view, the objective of optimizing Ukrainian higher education is to increase economic development in the

face of budgetary constraints; and this can be done by increasing the share of private education and reallocating budgets to the most efficient budget institutions.

One of such steps is the introduction of the indicative cost (minimum education cost) in state HEIs for a range of specialities, which are in great demand [Resolution of the Cabinet of Ministers of Ukraine № 191 "Some issues of introduction of indicative cost", 2020]. On the whole, the introduction of the indicative cost for the students who study under the terms of the contract in state HEIs is a positive step towards decreasing non-market advantages of state education. This innovation will significantly change the competitive relationship not only between state and private HEIs, but also significantly exacerbate them at the level of state HEIs.

It should be remembered, however, that Ukraine remains one of the most corrupt countries in Europe, which means that the absolute majority of the population exists in a perverse scale of values, that is, the main value for the majority is administrative capital, not human capital [Skrypnyk & Oborska, 2016; Skrypnyk, 2010]. Therefore, the question of the effectiveness of education and its positive impact on economic development goes far beyond the educational space.

The aim of the present paper is to study the impact of the introduction of the indicative cost of education on the ratio of private and public education institutions and on the shift of the equilibrium cost of education. Theoretical and methodological basis is a standard macroeconomic view on supply and demand, adjusted to the specificities of the higher education system of Ukraine, as well as standard methods of statistical and regression analysis.

**Literature review and the problem statement.** Humboldt University (Berlin) is the best example of transformation and integration into the European educational space. The main idea that ensured the success and speed of the transition to the modern European education system was to avoid interference in the transition process of the former university leadership, which is the complete exclusion of the continued existence of ideological and centralized education. To do this, not only the management but also more than 50% of the teaching staff were forced to be laid off from the university [Halasz, 2015; Gonca & Goksu, 2015; Wit, Hunter, Howard, & Egron-Polak, 2015; Restuccia, 2013; Szelenyi, 2010; Sabloff, 1999].

It is worth noting that the higher education systems of the European Union and the United States of America currently tend to increase the demand for higher education and, as a consequence, to narrow educational program specialization as well as to create private HEIs, which could be explained by their greater autonomy and flexibility in a competitive educational environment and by the demands of the labor market [Dźwigoł, 2018; Tilea & Vasile 2014; Chang, Huang, 2014; Mendolicchio, Paolini & Pietra, 2014; Ecwert & Zilcha 2012, Gapinski, 2010, Azarnert, 2010]. The transformation of the Ukrainian higher education was carried out practically by its former leadership and this explains its current state [Finikov, 2012].

At present, there is no common stand in Ukraine on the expediency of the phenomenon of "mass education". There is a view that Ukrainian education is too mass and does not improve the quality of training [Kvit, 2019].

The low economic efficiency of the Ukrainian higher education mentioned earlier corresponds to the correlation between the level of education and the corruption of society. The level of corruption in Ukraine reaches the levels of countries where

education (percentage of citizens with higher education) does not exceed 10 per cent of the population [Skrypnyk, Klymenko & Kostenko, 2020].

Based on the motivational model of corrupt behavior in higher education, it is shown that a significant decrease in this indicator is possible if the population of the country will change their views on the effectiveness of knowledge as a source of human and not only administrative capital [Skrypnyk, Oborska, 2016; Skrypnyk, Oborska, 2015].

In the previous works of the authors [Skrypnyk & Kostenko, 2020; Skrypnyk & Oborska, 2017], by applying the methods of econometric analysis, the issue of formation of demand and supply for educational services of individual HEIs in the speciality "Economics" was considered. It turned out that in addition to the objective characteristics of the HEI (location, status, educational program specialization of HEI, number of licensed and budget places), the elitism indicator, which was set as an imaginary variable, has a significant impact on demand.

The "elitism" factor has the greatest influence, both on the supply, which was set as the cost of educational services (training) and on the demand, which was determined as the number of applications for the speciality (educational program). In addition, it has been proven that state HEIs use a dumping pricing strategy provided that the training costs of contractors are partially reimbursed through state funding. As a result of the influence of the above factors, there has been a significant discrepancy between the market of educational services and the labor market for a long time in Ukraine [Skrypnyk & Kostenko, 2020].

The response to this situation has been the introduction, since 2020, of the indicative cost of education (the minimum tuition fees for the state-owned HEIs) for individual specialities, which enjoy the greatest demand among the population [Kostenko, 2020]. At first glance, this is not a market step of state regulation, however, if we assume that all forms of ownership operating in the educational space must have equal competitive conditions and the existing ratio of private and state education - this step becomes quite clear and justified.

The aim of the present paper is to study the impact of the introduction of the indicative cost of education on the ratio of private and public education institutions and on the shift of the equilibrium cost of education. Theoretical and methodological basis is a standard macroeconomic view on supply and demand, adjusted to the specificities of the higher education system of Ukraine, as well as standard methods of statistical and regression analysis.

**Research results.** We will analyze the situation in the market for educational services, which has developed partly on the basis of the condition of the highly skilled labor market, and partly on the basis of social perceptions of the level of remuneration at individual specialities.

The proportion of various forms of ownership in the educational process can be estimated according to human potential and client base (Table 1). Firstly, it should be noted that, state HEIs demonstrate significantly higher quantitative indicators than private HEIs [Open data of the State Statistics Service of Ukraine, 2020]. Secondly, the educational space is not completely controlled by the Ministry of Education and Science of Ukraine (MES of Ukraine). There are a significant number of state-owned HEIs, which are subordinate to other ministries and departments. In these HEIs, state-commissioned

enrollment takes place on a fixed offer at the level of educational institutions and generally with a lower passing grade than defined by the MES of Ukraine.

One of the levers for influencing the demand for educational services in 2020 will be the indicative cost of training - a certain amount of expenditure per student in each individual HEI for the separately defined specialities, which will determine the minimum amount of tuition fees under the terms of the contract in state HEIs.

**Table 1** - HEIs' Key Performance Indicators in 2019

Indicator	Total	The form of the HEI ownership			
		state	private	public	corporate
The number of HEIs, units.	1143	679	266	197	1
including by type of ownership					
colleges, technical schools, training schools	720	424	123	172	1
universities, academies, institutes	423	255**	143	25	0
The student population of HEIs, thou people*	1,441.74	1,205.45	77.30	158.13	0.86
including the educational (academic) level					
Master	309.44	277.35	27.70	4.40	0.00
Specialist	30.91	28.24	2.66	0.02	0.00
Bachelor	735.37	646.48	16.37	72.53	0.00
Junior Specialist, Junior Bachelor	366.01	253.39	30.58	81.19	0.86

\* - data as of 01.01.2020

**Source:** developed by the author on the basis of the Unified State Electronic Database in Education and State Statistics Service of Ukraine

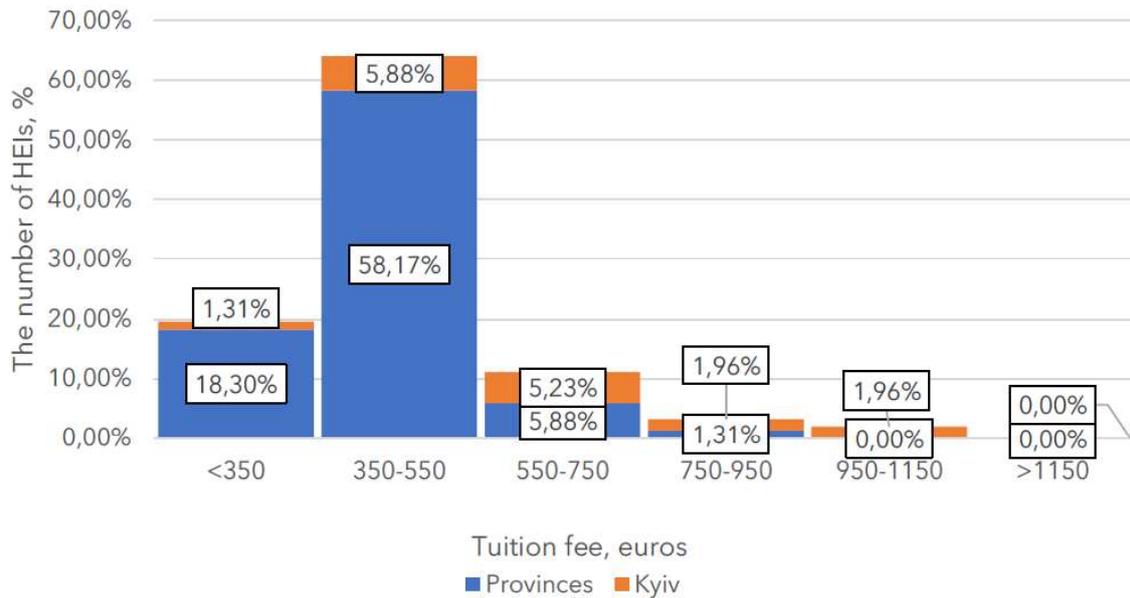
Thus, according to the Ministry of Education and Science of Ukraine, the average annual cost (amount of payment) of tuition per student at the expense of the state budget in Ukraine in 2019 is 43.0 thousand UAH, and at the expense of individuals (legal entities) under the contract - 16.5 thousand UAH [Stadnyy, 2020].

In 2020, the minimum cost (minimum tuition fees) on a full-time basis at the Bachelor's EL under the terms of the contract according to the basic provisions on the indicative cost of training will be determined as 60% of the average actual (cash) costs of a particular educational service provider for the previous calendar year per one estimated applicant for higher education, and from 2021 as the average amount of budget allocations of the general fund of the state budget per student in the amount of (70% - 2021, 80% - 2022) [Resolution of the Cabinet of Ministers of Ukraine № 191 "Some issues of introduction of indicative cost", 2020].

In the case when the indicative cost of education is more than 3 times higher than the value of the regional average monthly salary, this indicator (3 times the size of the regional average monthly salary) can serve as an indicative cost of education (hereinafter IC).

We defined 12 fields of study with a specific list of the most popular specialities, with an indicative list of 37 titles. In order to carry out a more detailed analysis of the impact of the

indicative costs introduction, we analyze the statistical characteristics of tuition fees in 2019 in the state and private sector of education on the example of the speciality 051 "Economics" (Fig. 1). Data for Kyiv are separated due to the presence of a significant asymmetry in the direction of increasing the tuition fees.



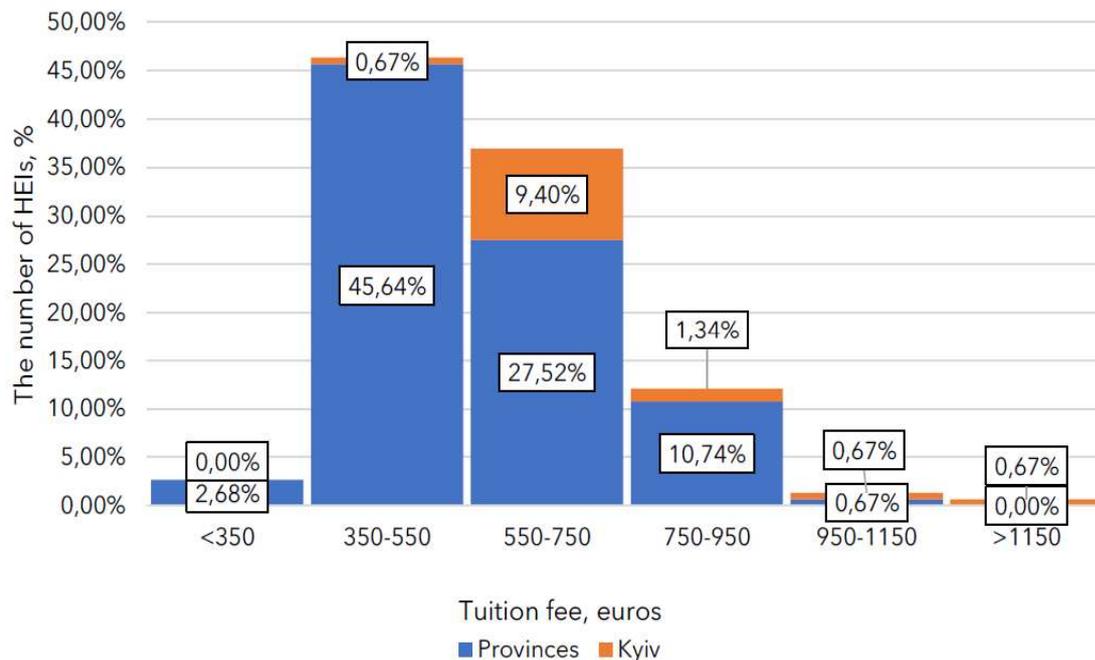
**Figure 1** - Tuition fees per one academic year at the Bachelor's EL at the full-time department on the example of speciality 051 "Economics" in 2019

**Source:** developed by the authors on the basis of aggregate data on tuition costs at HEIs in speciality 051 "Economics" in 2019 on a competitive basis as of July 16, 2020

On the assumption of the probability distribution of tuition fees within each step of the bar graph the distribution median of the price of attendance for the speciality "Economics" is 445 euros and the statistical expectation is 458 euros. Taking into account the ratio of students at state and private HEIs, which is approximately 1/10 (Table 1), we may conclude that these indicators determine with great confidence the pricing strategy of state HEIs. At present, within the timeframe of April to May 2020 [Ministry of Education and Science of Ukraine, 2020], the MES of Ukraine already has information on the established indicative cost in each of the HEIs subordinated to the MES of Ukraine. It should be emphasized that the indicative cost of education (IC) was defined as the only indicator in the HEIs, regardless of the specialties represented in them. The actual cost takes into account a wider range of other factors, but with a minimum cost (IC) of training. There is no doubt that this indicator will affect the determination of the tuition fees, not only in state but also in private HEIs, so we will analyze this indicator in more detail (Fig. 2).

In the central part of the distribution in the range of 350-750 euros, where more than 2/3 of the HEIs are concentrated, there was a shift of 17% of HEIs by 1 step of the bar chart (200 euros) in the direction of increase. The right tail of the distribution has not changed much and, most likely, the cost will not be significantly increased relative to the IC. Thus, the universities in the right tail of the distribution (the Taras Shevchenko National University of Kyiv (KNU), the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" (NTUU "KPI"); Kyiv National University of Culture and Arts, Odessa Institute of Trade and Economic KNTEU, Prydniprovsky State Academy of Physical Culture and Sports and

others) confirmed that their pricing is based on the cost of education, not the desire to exploit their high image.



**Figure 2** - The minimum cost of education (IC) at the Bachelor's EL at the full-time department in 2020

**Source:** developed by the author on the basis of the Unified State Electronic Database in Education of Ukraine, Ministry of Education and Science of Ukraine on a competitive basis as of July 16, 2020

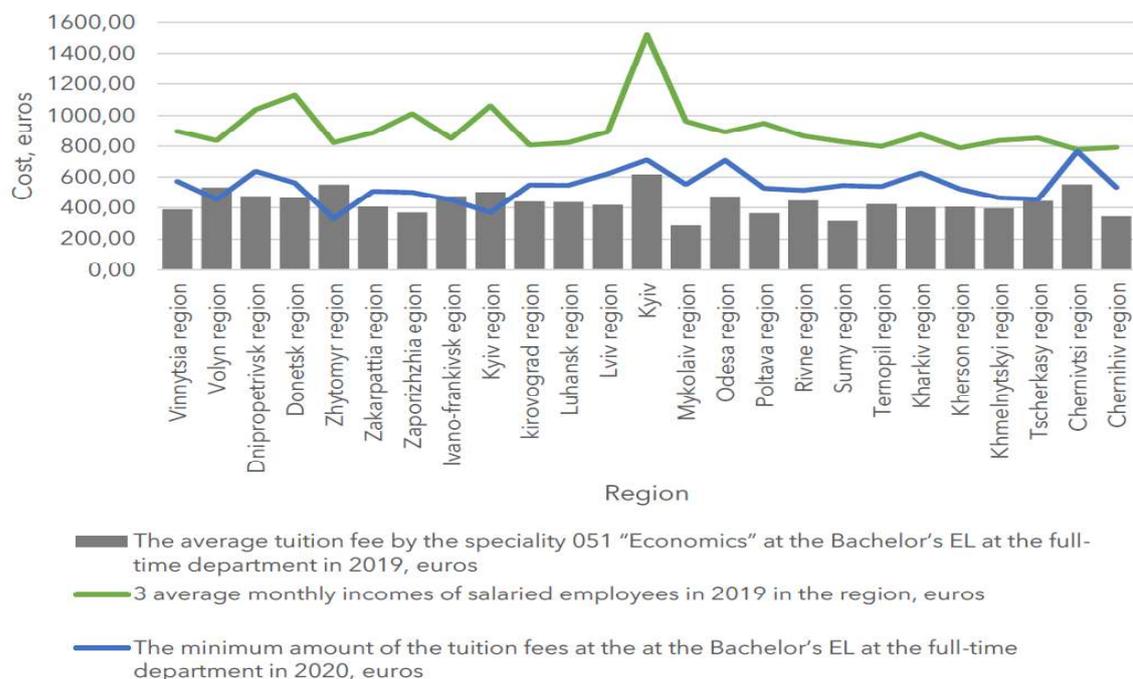
The median distribution increased to 555 euros and the mathematical expectation to 580 euros. Since one of the tasks of introducing the indicative cost of education was to compare the possibilities of private and state higher education, this step may be more effective. In Ukraine, being an excessively centralized country, there is a significant regional differentiation in the level of wages and salaries, which cannot but affect the market of educational services. Figure 3 presents indicative costs in selected regions based on HEIs data (at present the MES site already provides data on the IC data for individual HEIs [Kostenko, 2020]). Based on the results of calculations for almost all territory administration units (oblasts/cities) the minimum cost (IC) for 2020 will be higher than the tuition fee for the "Economics" speciality in 2019, except for Volyn, Zhytomyr, Ivano-Frankivsk and Kyiv and Chernivtsi regions (Fig. 3). At first glance, one can expect that the IC will be determined to a large extent by the tuition fees on a contractual basis (contract) in 2019, but this has not happened, since the correlation coefficient, though positive, is not significant (Table 2). The absolute leader by the cost of education in 2019 was the city of Kyiv, but the largest indicative cost of education - 767 euros - was in Chernivtsi region, while in Kyiv it does not exceed 700 euros. With regard to the definition of the IC at the expense of regional remuneration for work, it turned out to be much higher than the IC as defined by HEIs and therefore will not be implemented. Based on the information obtained, we may draw a conclusion, that the price quote of HEIs and the indicative cost of education are calculated according to completely different algorithms, which are based on different target functions except the HEIs, which are, according to econometric analysis, elite ones and support their own image by establishing the appropriate IC.

**Table 2** - Descriptive statistics of indicative cost for 2020 and the tuition fees in the speciality "Economics" for 2019

Indicators	The minimum cost of education at the Bachelor's EL, full-time department (weighted average) in 2020, euros	The average cost of education by the speciality "Economics" at the Bachelor's EL, full-time department in 2019, euros
Mean value	544.5	439.4
Standard deviation	99.3	76.1
Minimum	332.9	289.4
Maximum	766.7	616.7
Correlation ratio between indicators	0.11	

**Source:** developed by the author on the basis of the Unified State Electronic Database in Education of Ukraine, Ministry of Education and Science of Ukraine and State Statistics Service of Ukraine on a competitive basis as of July 16, 2020

The significant difference in compensation rates in Kyiv makes it extremely attractive for investment in private education. As of September 2020, the number of registered private higher education institutions in Ukraine increased by 25% compared to 2019 (the current number of HEIs is 202), among which 38 of HEIs are located in Kyiv [Open data of the Unified State Electronic Database on Education, 2020]. Thus, it is possible to state the fact of increased interest in investing in private higher education as a result of the introduction of IC.

**Figure 3** - Comparative characteristics of the cost of education for 2019 and two options for assessing IC

**Source:** developed by the authors on the basis of consolidated data on the cost of education in HEIs by the speciality 051 "Economics" in 2019 and data from the State Statistics Service of Ukraine on the average monthly salary

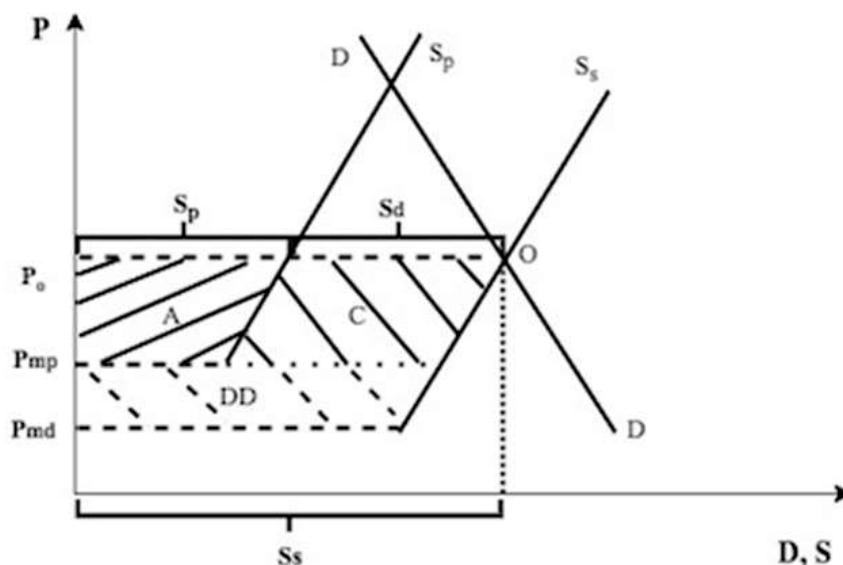
Later we will consider in more detail how the introduction of indicative cost of education will affect the shift of the equilibrium point of the cost of educational services, which will be established in the educational market. The situation on the market of educational services, which existed in 2019, is presented in Fig. 4.

The offer of educational services in private HEIs and the general supply curve  $S_s$  are presented separately. At a conditional equilibrium value of  $P_0$ , for which we can take the weighted average cost of one year of study in the speciality "Economics", the number of applicants under the contractual terms to state and public HEIs significantly outnumber the indicator of private HEIs (Table 1).

Given that the minimum cost of education services may be lower in state HEIs (dumping strategy), the demand for their education services was habitually higher and the revenues of state HEIs were significantly higher than those of private HEIs in 2019 (price dumping refers to the price offer below the minimum offered by private HEIs).

To summarize briefly, figures for 2019 at the state HEIs show absolute superiority, both in terms of number of applicants and in terms of income received [Open data of the Unified State Electronic Database on Education, State Statistics Service of Ukraine, 2020].

According to the data provided by the MES of Ukraine (Table 2), the indicative cost of education exceeds the equilibrium tuition costs in the absolute majority of the regions, so we will further consider how introduction of IC, exceeding the equilibrium tuition costs, will affect the market of educational services (Figure 4).



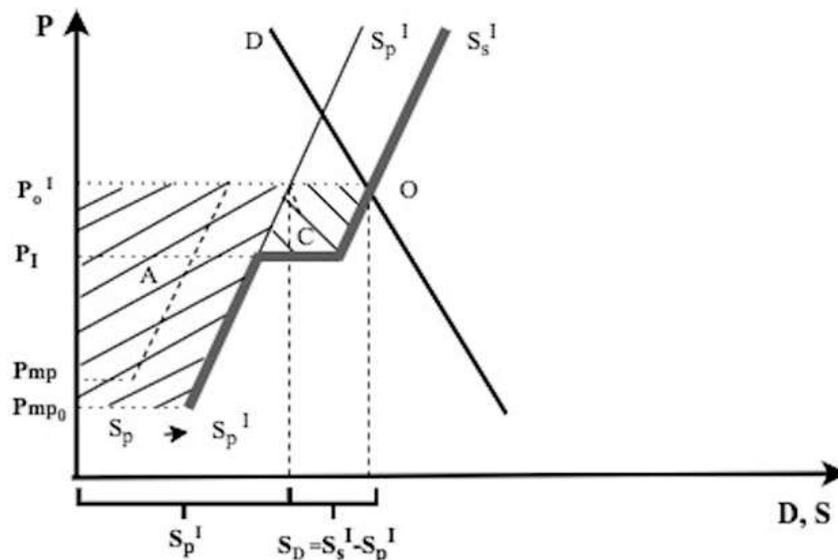
**Figure 4** - Demand and supply for higher education prior to the introduction of indicative cost of educational services (on the example of speciality 051 "Economics")

$S_p$  - offer of educational services of private HEIs,  $S_s$  - aggregate offer of educational services,  $O$  - equilibrium point,  $P_o$  - equilibrium cost of HEIs educational services,  $P_{md}$  - the minimum cost of educational services in state HEIs,  $P_{mp}$  - the minimum cost of educational services in private HEIs,  $A$  - the income of private HEIs,  $C$  - the income of state HEIs,  $DD$  - dumping income of state HEIs.

**Source:** developed by the authors.

In this case, the proposal at a cost lower than the indicative cost of education will be formed largely at the expense of private HEIs (some share remains with state HEIs, which are not subordinated to the Ministry of Education and Science of Ukraine), which increased both accreditation and tuition fees [Open data of the Unified State Electronic Database on Education, 2020; Open data of the Information system "Competition", 2020; Open data of the Information system "Search for applicants", 2020], which corresponds to the shift of the supply curve of private HEIs from the perspective of Spl. Upon reaching the indicative cost of education, the supply curve will shift to the value of the supply of state education at a cost that approaches the indicative cost of education and will become the total supply curve -SSI (Figure 5).

The question arises whether the supply of private HEIs and a small share of state HEIs can meet the low-income share of demand for educational services that exists in Ukraine. Most likely not, and this is in line with the desire to reduce the excessive mass of Ukrainian education.



**Figure 5** - Transformation of supply and demand for higher education resulting from the introduction of indicative cost of educational services, where the minimum cost will be higher than the equilibrium of  $P_I > P_o$  (on the example of speciality 051 "Economics") where  $P_I$  - fixed minimum tuition costs for state HEIs based on IC,  $P_o$  - equilibrium cost of educational services after the introduction of IC,  $P_{mp}$  - the minimum cost of educational services in private HEIs,  $P_{mp_0}$  - the minimum cost of educational services in private HEIs after the introduction of IC,  $S_p$ ,  $S_p^1$  - the offer of educational services of private HEIs before and after the introduction of IC,  $S_s$  - aggregate offer of educational services after the introduction of IC,  $S_d$  - the offer of state HEIs, A - gain (income) of private HEIs, C - gain (income) of state HEIs

**Source:** developed by the authors.

The equilibrium point is shifted towards a higher value and a lower equilibrium supply relative to the 2019 equilibrium point.

In a corrupt society, there is a strong tendency to use education as a source of administrative rather than human capital [Skrypnyk, Klymenko & Kostenko, 2020; Skrypnyk & Oborska, 2016]. Besides, the availability of excessively cheap education, which cannot be of good quality because of the low remuneration of teachers, cannot but contribute to a highly corrupt learning process, because one party is seeking

only a certificate of education and the other (teachers) additional means of survival. Therefore, the forced abandonment of the dumping strategy of a number of state HEIs is quite a positive and reasonable step in the process of educational regulation. The absence of a state dumping strategy will also have a positive effect on the price offer of private HEIs. According to the data of 2020, it can be concluded that private education has responded to the introduction of IC with significant increases in tuition fees, which are close to the minimum cost set by the state HEIs.

It should be emphasized that the indicative cost of education determines only the minimum tuition fee, as opposed to the final cost of admission under the terms of the contract in state HEIs. The uncertainty of the effects of the pandemic (declining incomes of the population, limited learning opportunities in EU countries) adds further uncertainty to the parameters of the 2020 university admissions process.

**Conclusions.** Since 2014, a fundamentally new stage in the reform of higher education has begun in Ukraine, aimed primarily at improving its quality and bringing the level of its graduates training to European standards. For a number of reasons, this is currently not possible without reducing its accessibility [Stadnyy, 2020; Skrypnyk & Kostenko, 2020; Kvit, 2019; Press Service of the State Audit Office of Ukraine, 2019; Skrypnyk & Oborska, 2017; Finikov, 2012]. It should be emphasized that Ukrainian higher education remains almost 90% state, given the general distribution of the number of students enrolled in state and private HEIs. State HEIs also offer training under the terms of contract and the number of applicants on contractual basis, based on the data of 2019, can significantly exceed the indicators of private HEIs.

The statistical analysis was carried out on the basis of the estimates of the indicative cost of education, conducted by individual HEIs, and statistical data from observations of the distribution of average monthly salaries in different regions of Ukraine and in the city of Kyiv, which may be also considered as an indicative cost. It was found that, for the absolute majority, the indicative cost of training on the basis of the costs of the HEIs was significantly lower than the three-fold legal average monthly salary in the regions of Ukraine and Kyiv. A comparison of the indicative cost with the averaged cost of education by the speciality "Economics" was made in 2019 both in the regional context and in the context of individual HEIs. The findings prove that only in four regions of Ukraine the indicative cost is lower than the cost of training under the contract in the speciality "Economics". The average indicator of the indicative cost exceeds the average tuition fees in the speciality "Economics" in 2019 by more than 100 euros.

Based on the graphical analysis of supply and demand for private and public higher education institutions, it is shown that over time the ratio of private and public HEIs under the terms of the contract may change significantly due to the redistribution of student body and income they provide. This is primarily due to the impossibility of using the dumping strategy by the public HEIs after the introduction of the indicative cost of education. As a result, there will be a shift of the equilibrium point for most in-demand specialities in the direction of increasing the cost of training and reducing the volume of final contracts between the applicants and higher educational institutions. It should be emphasized that improving the quality of educational institutions in Ukraine is an extremely difficult task that can be solved by changing public attitudes to education as a source of administrative capital. In the future, it is planned to conduct

research on the changes that have taken place in the Ukrainian higher education based on the results of university admissions process in 2020, which included restrictions on the minimum tuition fee for the students under contract (fee-paying students).

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